UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
SOUTHWEST FISHERIES SCIENCE CENTER
P.O. BOX 271
LA JOLLA, CA 92038-0271

CRUISE ANNOUNCEMENT

VESSEL: NOAA Vessel McArthur, 9711-Mc, Mc 97-11

CRUISE DATES: November 4-14, 1997

PROJECT: MERRP, Coastal Fisheries Resources Division

ITINERARY: Depart Nimitz Marine Facility, San Diego at 0800 on November 4, 1997 and travel to Big Sycamore Canyon Ecological Marine Reserve to begin sampling scheme. Occupy Reserve and its perimeter for 3-4 days before traveling north to Vandenburg Marine Ecological Reserve for more sampling. Operations will be terminated during the morning of November 13 to return to San Diego by 0800,November 14.

OVERALL PROJECT OBJECTIVES:

1. To determine the effectiveness of the Vandenburg and Big Sycamore Canyon Marine Ecological Reserves as source areas for the production of fish eggs and larvae that will “reseed” areas outside of the Reserves.

2. To produce bathymetric maps and overlay habitat and sediment characteristics to produce a full description of available habitat within each Reserve.

3. To determine prevailing current patterns that drive larval dispersal and juvenile recruitment in the two Reserves during winter and summer.

4. To compile a list of the resident fish fauna,

including presettlement juveniles, in the two Reserves.

5. To compare the fine-scale pattern of spawning events within the Reserves and in the adjacent areas, and the dispersal patterns of eggs and larvae.

CRUISE OBJECTIVES:

1. To produce bathymetric maps and overlay habitat and sediment characteristics to produce a full description of available habitat within each Reserve.

2. To compile a list of the resident fish fauna, including presettlement juveniles, in the two Reserves.

3. To test the efficiency of proposed equipment and establish sampling protocol that will address most effectively the overall project objectives in subsequent cruises.

PROCEDURES:

1. The basic sampling design will be to sample three regions at each of the two sites. These Regions will be north of each Reserve, south of each Reserve, and within each Reserve. At each region, sampling will be done along depth contours. Before each sampling period we will transit along the 40 meter contour with the ADCP to determine the pattern of water flow through the Reserve. Sampling will be carried out around the clock. Each region will include the following:

A. “Vertical” CalBOBL (CalCOFI Bongo) plankton tows, from bottom to surface, using paired 505 micron mesh nets with 71 cm diameter openings. The platform used will either be the main vessel (starboard A-frame) or a 29' workboat, depending on the sampling depth. A grid will be established and four stations at three separate isobaths will be sampled a minimum of two times during the day and two times during the night. Additional tows may also be done over sites of particular interest. As the vessel remains stationary, the net will be lowered vertically until the weights/cod-ends touch bottom, then retrieved vertically to the surface. One cod-end sample will be preserved in 80% ETOH for future genetic analysis, the other sample will be sorted onboard and any

eggs/larvae will be incubated live to determine species I.D. and to measure development rates at specific temperatures.

B. Diver transects, including live-trapping and substrate-mapping will be conducted each day during daylight hours from the inflatable launch or “safe” boat. Divers will swim offshore-onshore transects to the 40 meter contour beneath the support launch which will be equipped with a handheld GPS system. Fish traps will be deployed and monitored along these transects.

C. The egg pump will be used to continuously sample along three depth contours in each of of the regions. Each of the 9 transects per Reserve (north, south, and in the Reserve at three depths) will consist of about one nautical mile parallel to the coast.

D. The GPS current drifters will be deployed on an intermittent basis from a specific location (e.g. a kelp bed) and closely monitored to provide likely drift patterns of eggs. Recovery will be via the inflatable launch or “safe” boat. Also, general current flows will be determined by the ACDP by transmitting along the outside of the Reserves each day prior to sampling. Data will continue to be recorded during our sampling transects.

EQUIPMENT: 1. Supplied by scientific party:

80% Alcohol
Pint, quart and gallon jars
Inside, outside labels
71 cm CalCOFI bongo frames
71 cm CalCOFI 505 micron mesh nets
333 micron mesh codends
75 lb bongo weights
Weights for codends
Data sheets/clipboards
Incubation tank/racks(Living stream)
1/3 HP water chiller unit
Lauda water baths(2)
Microscopes/lights(3)

Incubation cylinders(crystal/nitex)
Strainers/sieves/beakers
Extension cords
Thermometers/temp-mentors
Sampling vials for egg-pump
Squirt bottles
Hoses/Fittings
5 gallon buckets
Current drifters(3)
SCUBA gear/wetsuits(4 full sets)
Fish traps
Handheld GPS
Underwater notepads
Weather observation data sheets
Egg-pumping system/van/hardware
CalCOFI Manta net frames
60 cm CalCOFI 505 micron mesh nets

2. Supplied by R/V MacArthur

19' inflatable skiff suitable for 4 divers and equipment.
29' work boat with A-frame, winch, capstan loaded with 1/4" wire rope for vertical bongo tows in shallow water.
17' “Safe” boat with 115hp outboard motor
Winch monitoring system(wire out)
ADCP
Starboard A-frame Pullmaster winch with 1/4" wire rope for vertical bongo tows
Compressed air for divers
Suitable launch rigged with differential GPS capability plus ability to deploy/ recover current drifters
Access to clean seawater(firehose?)

PERSONNEL:

Russ Vetter, Chief Scientist	(SWFSC)
Geoff Moser	(SWFSC)
William Watson	(SWFSC)
Dave Ambrose	(SWFSC)
Wes Armstrong	(SWFSC)
Eric Lynn	(SWFSC)
Cindy Taylor	(SIO)
Larry Robertson	(SWFSC)
Jason Stannard	(SDSU)
Carol Kimbrell	(SWFSC)
Chuck Oliver	(SWFSC)
Ron Dotson	(SWFSC)

*SWFSC personnel authorized per diem at the rate of $2.00 per day paid via Imprest Fund on a Travel Roll Voucher at the termination of cruise.

WATCH HOURS: 0000-1159
1200-2359

Charge to account #8L1A6A34

OVERTIME: 600
NIGHT DIFF: 660

Date:_____ Prepared by: _____
Larry Robertson

Approved by: _____
Michael F. Tillman Ph.D.
Science&Research Director
Southwest Region